Dispositional Flow Scale 2: validity and reliability of the Italian version and discussion of the applications to different samples

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AIM OF THE PRESENTATION

- Show the cultural and theoretical issues behind Dispositional Flow Scale 2
- Describe strong and weak points of the instrument
- Clarify the procedural aspects of administration
- Present the reliability and validity of the Italian version
- Suggest future development of research

BACKGROUND – CHARACTERISTICS OF FLOW

Co-occurrence of dimensions: self-determination, intrinsic motivation, perceived challenge-skill balance, absence of boredom and anxiety, clear goals, immediate feedback, concentration on the task, lack of conscious control, altered perception of time, positive affective state (Csikszentmihalyi, 1990)

Psychological selection: because of its emotional and cognitive benefits flow is actively sought after. People select more frequently those activities and artifacts: acquiring higher skills, they look for more complex situations (Csikszentmihalyi & Massimini, 1985; Delle Fave, Massimini, Bassi, 2011; Inghilleri, 2009; Boffi, Riva, Rainisio & Inghilleri, 2016;)

Autotelic experience: an experience phenomenologically positive, valid and rewarding in itself. The repeating of flow favors the evolution of the individual, promoting an *autotelic personality* (Csikszentmihalyi, 1975/2000; Nakamura & Csikszentmihalyi, 2002)

Autotelic person: has the ability to understand and abstract the intrinsic characteristics of the activities connected to flow and can look for other activities with the same characteristics, in order to maximize the opportunities to find flow in life (Csikszentmihalyi & Csikszentmihalyi, 1988; Nakamura & Csikszentmihalyi, 2002; Riva, Rainisio & Boffi, 2014).

BACKGROUND – MEASUREMENT OF FLOW

A vast array of tools were designed over the years to measure flow, and each of them implies different models exploring peculiar aspects of the general theory of flow (Moneta, 2012)

Among them, some of the most used are:

- **Flow Questionnaire** (Csikszentmihalyi & Csikszentmihalyi, 1988)
- **Experience Sampling Method** (Csikszentmihalyi, 1977; Delle Fave & Bassi, 2000)
- **Scales developed by Jackson and Eklund** (2002)
  - ✓Comprehensive characterization of flow
  - ✓Psychometrically sound
  - ✓Quickly and easily administered
  - ×"Impose" the condition of flow on respondents
  - ×Ignore the distinction between antecedents and indicators of flow
  - ×Cannot measure prevalence of flow

BACKGROUND – COMPONENTIAL MODEL

(Jackson & Csikszentmihalyi, 1999)

D1 – Challenge-Skill Balance (CSB): perception of the situation as stimulating and resources adequate to the situation.

D2 – Merging Action-Awareness (MAA): people feel total involvement in the action, without the perception of exertion or intrusive thoughts.

D3 - Clear Goals (CG): defined and measurable objectives from coherent information.

D4 – Unambiguous Feedback (UF): clear and timely feedback from the situation.

D5 – Concentration on the Task at Hand (CTH): attention is focused solely on the ongoing task and there's no space for unnecessary information.

D6 - Sense of Control (SC): perception of automatic and spontaneous control.

D7 - Loss of Self-Consciousness (LSC): People perceive themselves as part of the task they're carrying out.

D8 - Transformation of Time (TT): sense of time is altered, perceived as slower or faster.

D9 - Autotelic Experience (AE): intrinsic satisfaction produced by the task, regardless of the original motivation and expected results.

BACKGROUND – THE FLOW SCALES

Flow can be measured as a **state**, a **broad trait** and a **domain-specific trait**

- **Multidimensional** (36 items)

LONG Dispositional Flow Scale 2 – General & physical

LONG Flow State Scale 2 – General & physical

- **Unidimensional** (9 items)

SHORT Dispositional Flow Scale

SHORT Flow State Scale

- **Core** (Phenomenological scales, 10 items)

CORE Dispositional Flow Scale

CORE Flow State Scale

METHOD – PARTICIPANTS AND PROCEDURE

Participants

843 participants, age M = 31.79, SD = 12.52, 60.69 % female

41.50% high school, 41.02% university degree

29.5% workers, 45.7% athletes, 24.8% students

Translation

Guidelines for test adaptation (Tanzer & Sim, 1999) and agreement with the authors of the original scale

Cycle of translation and back translation

Pre-test to avoid culture and context biases (van de Vijver & Leoung, 1997)

Written instructions for filling in

Brief description of flow

Free choice of the flow episode

METHOD - MEASURES

Dispositional Flow Scale 2 - General (Jackson, Martin & Ecklund 2008)

Measures the general tendency to experience flow characteristics within a setting nominated either by the respondent or investigator

36 items, 9 factors, 5-point Likert, (α = .94)

Positivity Scale (Caprara et al., 2012)

Measures positivity, defined as "the tendency to view life and experiences with a positive outlook"

8 items, 1 factor, 5-point Likert, (α = .86)

Satisfaction with Life Scale (Diener et al., 1985)

Measures global cognitive judgements of satisfaction with one's life

5 items, 1 factor, 5-point Likert, (α = .81)

Utrecht Work Engagement Scale (Schaufeli & Bakker, 2003)

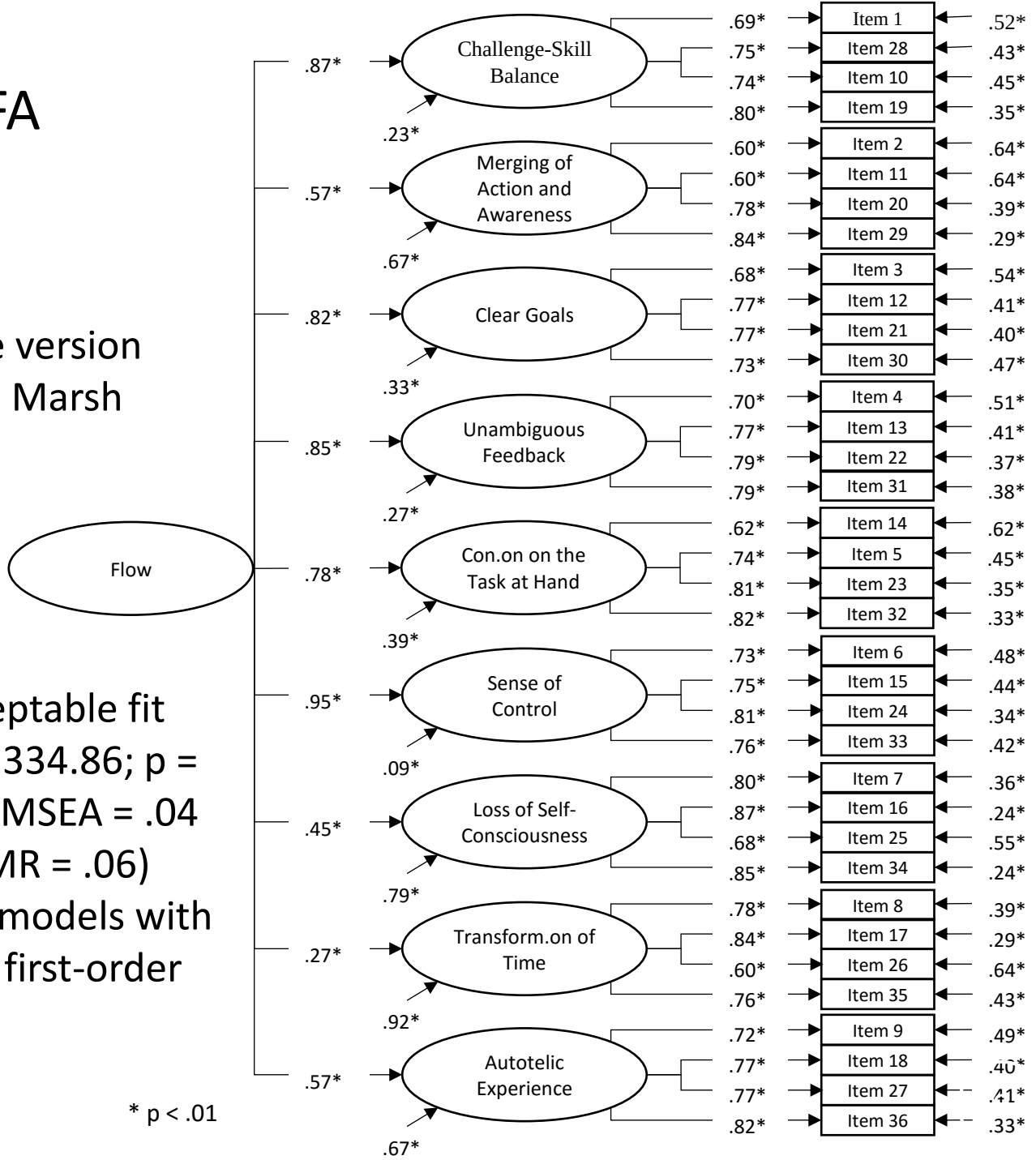
Measures a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption

17 items, 3 factors, 7-point Likert, (α = .94)

RESULTS – CFA

9 first-order factors
1 second-order factor
36-item version

The structure mirrors the version proposed by Jackson and Marsh (1996)



This version showed acceptable fit indexes (χ^2 [842, 585] = 1334.86; p = .00; CFI = .95; TLI = .95; RMSEA = .04 [.03; .04], sig. = 1.00; SRMR = .06) compared to alternative models with 1 first-order factor and 9 first-order correlated factors

* p < .01

RESULTS – RELIABILITY AND VALIDITY

DFS-2 shows **good reliability and convergent and discriminant validity**, tested by Cronbach's Alpha, the Composite Reliability (CR), the Average Variance Extracted (AVE), the Maximum Shared Squared Variance (MSV) and the Average Shared Squared Variance (ASV)

The Variance Inflation Factor (VIF) **excluded the presence of relevant multi-collinearity** among the nine first-order factors

	α	CR	AVE	MSV	ASV	VIF
CSB	.83	.85	.56	.39	.30	2.41
MAA	.73	.80	.52	.41	.29	1.50
CG	.82	.83	.54	.37	.27	2.08
UF	.84	.80	.51	.40	.33	2.29
CTH	.83	.80	.54	.31	.26	2.06
SC	.85	.84	.53	.36	.36	3.25
LSC	.82	.76	.50	.32	.26	1.33
TT	.82	.73	.49	.30	.27	1.30
AE	.85	.75	.51	.32	.30	1.56
Flow	.94	.82	.56	.38	.32	-

RESULTS – STRUCTURAL INVARIANCE

To verify the scale across different types of experience

- We tested the model for the **three sub-samples**
- We classified the freely chosen episode reported in the test into **six categories of experience**

Episode	N	χ^2; df; p	CFI	TLI	RMSEA; C.I.; p	SRMR
Creative activities	54	892.59; 585; .00	.91	.90	.06; .06-.08; .02	.09
Experiential	125	683.12; 585; .00	.95	.94	.04; .03-.05; .95	.08
Intellectual/Study	98	805.38; 585; .00	.92	.92	.06; .05-.07; .07	.08
Job	162	887.67; 585; .00	.93	.92	.05; .05-.06; .03	.08
Social / Relational	29	2528.79; 585; .00	.79	.77	.35; .33-.36; .00	.18
Physical activity	366	969.39; 585; .00	.92	.91	.04; .03-.05; .99	.06
Subsample						
Workers	249	947.59; 585; .00	.95	.94	.05; .04-.06; .26	.06
Athletes	385	900.68; 585; .00	.96	.95	.04; .03-.04; 1.00	.06
Students	209	784.84; 585; .00	.94	.94	.04; .03-.05; .97	.07

RESULTS – CORRELATION

The correlations among the nine first-order factors are **all significant**, but not homogeneous

	CSB	MAA	CG	UF	CTH	SC	LSC	TT	AE
CSB	-								
MAA	.44*	-							
CG	.58*	.37*	-						
UF	.64*	.41*	.61*	-					
CTH	.55*	.35*	.59*	.56*	-				
SC	.73*	.48*	.64*	.69*	.65*	-			
LSC	.32*	.40*	.25*	.28*	.29*	.34*	-		
TT	.19*	.30*	.18*	.14*	.23*	.17*	.29*	-	
AE	.43*	.31*	.42*	.38*	.47*	.41*	.29*	.39*	-
Mean	15.38	13.82	15.92	14.63	15.79	15.14	13.58	15.19	17.04
Std.Dev.	2.74	3.16	2.92	3.02	3.06	2.75	4.28	3.54	2.85

* $p < .01$

RESULTS – CORRELATION

No correlation with **age** and **gender** in general, with the exception of some factors

Good correlation with the **Positivity Scale**, the **Satisfaction with Life Scale** and the **Utrecht Work Engagement Scale**

	Gender	Age	SatLife	Positivity	UWES
CSB	.04	.07	.21**	.28**	.17*
MAA	.13**	-.06	.11**	.13**	.05
CG	-.02	.11**	.18**	.26**	.23**
UF	.04	.19**	.15**	.23**	.18**
CTH	-.05	.11**	.21**	.26**	.29**
SC	.01	.14**	.18**	.26**	.18*
LSC	.17**	.07	.17**	.19**	.11
TT	.00	-.15**	.08*	.08*	.17*
AE	.06	-.12**	.23**	.28**	.17*
Flow	.07	.06	.25**	.31**	.23**

* $p < .05$; ** $p < .01$

CONCLUSIONS

- The psychometric values and the structure of the model, with nine first-order factors and one second-order factor for the 36-item version, of the **Italian scale are among the most correspondent to the original version in English** (the full paper is currently under peer review)
- The results encourage us to use the scale for **cross-cultural comparison**, devoting particular attention to **translation issues**. This holds true above all when referring to colloquial expressions
- In line with the literature, these data demonstrate that **optimal experience can be experienced in situations of any kind** and that the chosen instrument can be effectively used in various fields
- The correlations among the nine factors suggest that **flow can display peculiar characteristics** depending on the specific activity carried out (e.g. Transformation of Time and Loss of Self-Consciousness)

FUTURE DEVELOPMENTS

Cultural issues

- The Italian and the Spanish scales (Gonzales-Cutre & al., 2009) perfectly mirror the English version, other validated translations show different models: see French (Fournier & al., 2007), Portuguese (Gouviera & al., 2012) and Japanese (Kawabata & al.2008)
- More data are needed to understand the role of culture and language with such an instrument

Integration of current information

Further developments of the scale are necessary relying on the strong points of other well established instruments, to include important information for describing optimal experience such as:

- repeating of the activity source of flow
- prevalence of flow
- distinction between antecedents and actual indicators of flow

Thank you

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